

We are learning to solve division problems that have fractions in the answer.

NUMBER KNOWLEDGE

Numeracy Book 4

Number Mats and

Number Fans

Fraction Pieces

Creating Fractions

Bowl a Fact

In this book

Twos, threes, fives and tens in numbers to 100 page 233

Multiplication and division

basic facts page 234

Identifying fractions... page 239

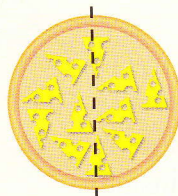


Fraction pieces.

Example

Three pizzas are shared by two people.
How many pizzas does each person get?

$$3 \div 2$$

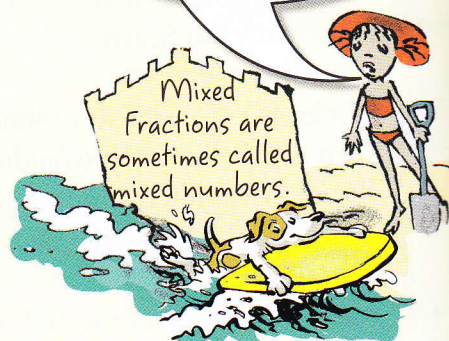


(2 wholes and 2 halves) $\div 2 = 1$ whole and 1 half

1 whole and 1 half is written as $1\frac{1}{2}$.

$$3 \div 2 = 1\frac{1}{2} \text{ pizzas}$$

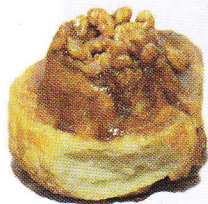
$1\frac{1}{2}$ is called a mixed fraction because it has a whole number AND a fraction part.



Activity

1

Janie had five sticky buns.



- Show how you could cut up the buns so you could share them amongst two people.
- How many whole buns would each person get? What fraction of a bun would each person also get?
- Write an equation to record your answer.

There are many different ways you could show this. Try to find more than one way.



In the example the equation was

$$3 \div 2 = 1\frac{1}{2}$$



2

Show a partner how to work out how much orange each person would get if

- seven oranges were shared by two people.
 - three oranges were shared by four people.
 - nine oranges were shared by four people.
 - two oranges were shared by three people.
- Take turns to record the answer using an equation.

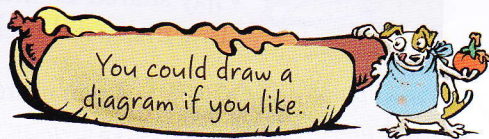
Draw a picture if you need to.



- 3 Maddie takes five muffins to school. She wants to share them amongst three people.

a How many muffins would each person get? Explain how you worked this out. Write the answer as a mixed fraction.

b What if Maddie shared her muffins with six people?



- 4 Henry had 14 minutes of talk time left on his mobile phone. He wanted to make 4 calls of equal length.

If each call is 3 minutes long there will be 2 minutes left over. That's no good – I want to use up all the time.



Discuss and write down how long each call should be to use up all of the 14 minutes.

- 5 Ms Howe had 12 m of fabric to share between 5 pupils in her fashion design class. She wanted to cut the fabric so that each pupil got the same amount of material.

a $5 \times 2 = 10$ and $5 \times 3 = 15$ so it would be more than 2 m each but less than 3 m.



Is Millee correct? Explain why you think this is.

b $12 \div 5 = 2$ with 2 m left over. Now I have to share the 2m left over amongst the five pupils.



Is Ms Howe correct? How many metres would each pupil get?

- 6 Bayley, Hemi, Mark and Cruz washed their neighbour's two cars and got paid \$10 to share.

a Is Bayley correct?

Write an equation to justify your answer.

b How much should they get each in dollars and cents? Explain your answer.

I think we get $2\frac{1}{2}$ dollars each but how much is that in dollars and cents?



7 Challenge

Three brothers raked up leaves and got \$10 to share.

a Is it possible to share this amount equally? Explain.

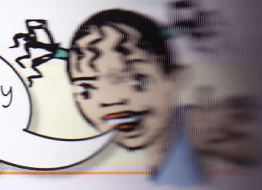
b How much should each brother get?



Example Vijay shared 17 muesli bars amongst 5 people.
How many did each person get?

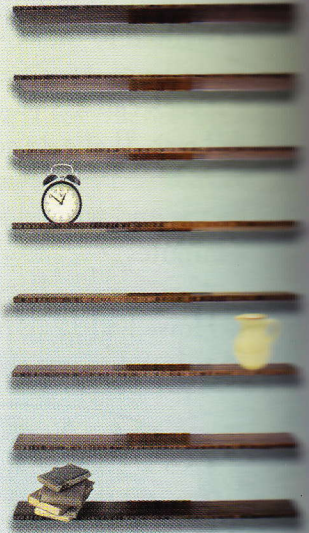
$$17 \div 5 = 3 \text{ with } 2 \text{ remainder} \\ = 3\frac{2}{5}$$

If the two left over are shared by five people they will get $\frac{2}{5}$ each.

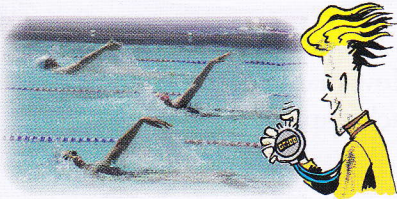


For questions 8 to 12, show how you worked out the answer.
Write an equation for each.

- 8 Harley had 14 salami pieces.
He shared them equally amongst 3 pizzas.
How many pieces would be on each pizza?
- 9 Charlie had a piece of wood that was 6 m long.
He cut it into 8 equal pieces to make shelves.
How long was each piece?
- 10 Rachel is having a dinner party for four people.
She wants each person to have at least $2\frac{1}{4}$ pieces of potato and $1\frac{1}{2}$ carrots each.
She has 10 pieces of potato and 7 carrots
- a Is this enough potato? Justify your answer.
b Are there enough carrots? Justify your answer.

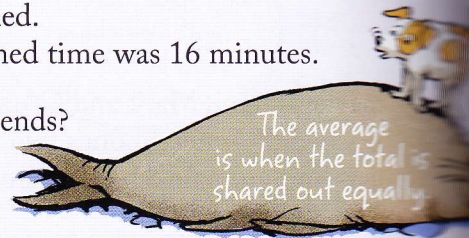


11



Tom and his 5 friends swam in a relay race.
Sam stopped the clock when the last person finished.
Their combined time was 16 minutes.

What was the average time for each of the friends?



12 Write these as mixed fractions.

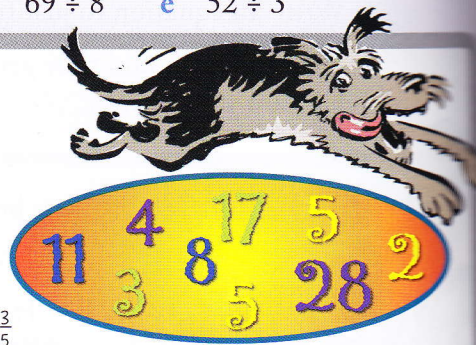
- a $33 \div 5$ b $47 \div 7$ c $20 \div 6$ d $69 \div 8$ e $52 \div 3$

13 **Challenge**

Use numbers from the ring to put in the green boxes to make these mixed numbers.
You can use the numbers more than once.

 \div = ?

- a $2\frac{1}{2}$ b $4\frac{1}{4}$ c $3\frac{2}{3}$ d $1\frac{3}{8}$ e $5\frac{3}{5}$



Mixed fraction game



Red cards numbered 1 to 100, blue cards numbered 1, 2, 3, 4, 5 or 8, small pieces of paper to write your answers on.



- 1 Shuffle each set of cards.
- 2 The player with the last birthday is the dealer.
- 3 The dealer deals a red card to every player. This tells you how many cakes you have got.
- 4 The dealer deals a blue card to every player. This tells you how many people are to share the cakes.

Example Millie was dealt a red card with 24 on it and a blue card with 5 on it.
She said "I have to share 24 cakes amongst 5 people."

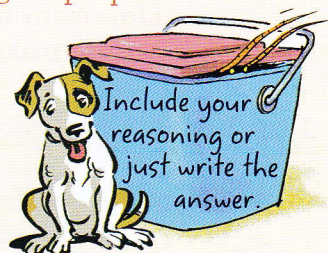
- 5 For your cards, work out how many cakes each person would get. Write this on a piece of paper.

Example Millie wrote this on a piece of paper.

$$\begin{aligned} 24 \div 5 &= 4 \text{ remainder } 4 \\ &= 4\frac{4}{5} \text{ cakes each} \end{aligned}$$



I know that
 $4 \times 5 = 20$ so $24 \div 5$
is 4 with 4 remainder.
If I divide the 4 remainder
amongst 5 people they will
get $\frac{4}{5}$ each.



- 6 Put your cards and your answer down in front of you.
- 7 Check the answers of the other players. If there are a lot of players you could just check the answers of the players on either side of you.
- 8 Each player who got their answer correct gets five points.
- 9 Play ten rounds. The person with the most points wins.
- 10 If there is more than one person with the same number of points, have a play off.

The dealer gives the players in the play off a red and blue card face down.

When the dealer says "go" the players turn over their cards.

The first player to work out the correct answer, write it down and give it to the dealer is the winner.

